Safe Harbor

These presentations contain forward-looking statements, including those regarding market outlooks; technology roadmaps; the proposed Varian merger; and Applied’s market positions, products, growth opportunities, strategies and business outlooks. These statements are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements, including but not limited to: the level of demand for Applied’s products, which is subject to many factors, such as uncertain global economic and industry conditions, demand for electronic products and semiconductors, government renewable energy policies and incentives, and customers’ new technology and capacity requirements; the satisfaction of conditions precedent to the proposed merger with Varian, including the ability to secure regulatory approvals in a timely manner or at all; Applied’s ability to (i) develop, deliver and support a broad range of products and expand its markets, (ii) align its cost structure with business conditions, (iii) successfully execute its acquisition strategy and realize synergies, (iv) obtain and protect intellectual property rights, and (v) attract, motivate and retain key employees; and other risks described in Applied’s SEC filings. All forward-looking statements are based on management’s estimates, projections and assumptions as of July 12, 2011, and Applied undertakes no obligation to update any forward-looking statements.
## New Products Released At 2011 Semicon West

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<th>TRANSISTOR-ENABLING PRODUCTS</th>
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Low-κ Leadership for the Next Decade
Producer Black Diamond 3 and Producer Nanocure 3

Requirements of Low-κ Film

- Electrical
- Mechanical

>150 Downstream Process Steps

- Lower capacitance
- Lower power consumption
- Higher mechanical strength
- Packaging yield
- Uniform curing
- Less device variability
Advanced Interconnect is a Growing Inflection

Served Available Market Opportunity ~$500M

Source: Gartner 2011 market size data for IMD films + cure
Low-k Leadership For The Next Decade
Producer Black Diamond 3 And Producer Nanocure 3

- Higher mechanical strength
- Packaging yield
- Lower capacitance
- Lower power consumption
- Best-in-class uniformity
- Less device variability
Porosity Engineering

Higher Strength with Lower $\kappa$

* Normalized Young’s Modulus
Strength Enabled by Patented Chemistry

Better isolation with engineered porosity

Less interconnected, more uniform pores

Ordered structure from designer chemistry
How Small Is a Nano Pore?

A Human DNA Strand

A nanometer sized pore is **half** the width of a DNA strand

Black Diamond 3 film is engineered on the inside with nano pores
Lowering Interconnect Power Consumption

Interconnect power is \( \sim \frac{1}{3} \) of total chip power consumption.*

Lowering the dielectric constant, \( \kappa \), improves insulation and lowers device power use.

Source: Chandra, G.; Kapur, P.; Saraswat, K.C.; "Scaling trends for the on chip power dissipation"
Generations of Low-κ Technology Leadership

Every generation lowers interconnect power by ~10%*

Interfacial Engineering Offers Lower Effective k

**Interface Layer (before)**

- Black Diamond 2
  - Low k bulk layer
  - Higher k interface layer

**Interface Layer (now)**

- Black Diamond 3
  - Low k bulk layer
  - Higher k interface layer

Cu low k

- 45/40nm
- 32/28nm
- 22/20nm
- 15/14nm

Interface layer is scaling to smaller device nodes enabled by Black Diamond 3
Black Diamond 3 With Nanocure 3 UV
Expands Leadership in Low-k Dielectrics

Engineered porosity offers higher mechanical strength for chip packaging yield

Extreme low $\kappa$ dielectric ($k \sim 2.2$) lowers power consumption

Thinner interface layer offers lower $k$ for smaller device nodes